

April 14 2008

Draft (beth ericksen)

Mr. John Burggraf
Lakeview Rock Products, Inc.
P.O. Box 540700
North Salt Lake, Utah 84054-0700

Subject: Approval of Notice of Intention to Commence Large Mining Operations and Reclamation Surety, Lakeview Rock Products, Inc., Beck Street Quarry, M/035/020, Salt Lake County, Utah

Dear Mr. Burggraf:

The Division has received the executed reclamation surety and signed contract for the Beck Street Quarry and one copy of the February 2006 Notice to Conduct Large Mining Operations (NOI). The Division now permits you to mine as outlined in the NOI, however, pursuant to rule R647-4-102, the Division requires an NOI update and modification immediately.

The plan modification must:

- Address the Division comments in the March 8, 2008 review. This portion of the plan modification must be completed and submitted to the Division by July 30, 2008. Further discussion with the Division is essential.

In addition:

- Acreage cannot be disturbed beyond the permit area footprint identified in the February 2006 NOI.

Three rule variances were requested in your notice of February 2006. As required by R647-4-112.3 the Division must specifically approve or disapprove these variances in writing.

- R647-4-111.7 – Highwalls: The October 2004 IGES preliminary engineering analysis provided insufficient justification to grant a permanent variance. Additional data and stability analyses will be required to demonstrate that the planned highwall will be left in a stable configuration and will not present a hazard to public safety and welfare. Therefore, a time-limited highwall

variance will be granted until June 2009. In the interim, a complete and appropriate slope stability study must be performed and submitted to the Division. The outcome of that study will determine subsequent plan requirements.

- R647-4-111 – Revegetation: This variance request is unnecessary due to R647-4-111.13.12 which indicates upon Division determination the revegetation work has been satisfactorily completed within practical limits. Please refer to the Division review of March 8, 2008 page 13 for specifics.
- R647-4-107.5 – Topsoil: The justification for this variance requires additional information before it can be granted. Further information will be provided at the initial NOI modification meeting. The February 2006 NOI incorrectly requests this variance under R647-4-111.

While modifying the plan, it is suggested that discussion/meetings with the Division occur on a frequent basis. An initial meeting is to occur on or before May 7, 2008. It may be necessary to arrange a series of meetings with specific individuals at the Division to ensure each issue is addressed appropriately.

Please be aware that the Division expects that substantive modifications to the February 2006 NOI are required to ensure the plan is accurate, complete, and consistent with the Act. Failure to follow through with the actions outlined in this letter will result in enforcement action.

Enclosed are copies of the signed and executed Reclamation Contract, reclamation surety forms, and the "approved" Notice for your files.

Please call me if you have any questions and to arrange the initial NOI modification meeting (538-5258).

Sincerely,

Susan M. White
Mining Program Coordinator
Minerals Regulatory Program

SMW:BE:pb

cc : Lynn Pace, Salt Lake Corporation

DRAFT comments re:

IGES Summary Report, Site Observations and Preliminary Engineering Analyses, Staker Beck Street and Lakeview Reclamation Pit Slope Stability, 07-Oct-04.

The fact that Lakeview Rock Products, Inc (or their predecessor) contracted with IGES to conduct this study is commendable, however, a number of potential problems with the IGES analyses, conclusions, and recommendations have been identified.

Note the title of the October 7, 2004 IGES report includes the phrase "Preliminary Engineering Analyses." Other phrases used in this report including "preliminary analysis," "present level of data," "significant data gaps," "lack of substantive data," and "limited quantitative basis" indicate the general lack of comfort IGES had with the input parameters necessary to perform these stability analyses.

The IGES report does not contain a plan map of the proposed final pit design which was analyzed in this investigation. Unfortunately, without a plan map of the proposed pit, it is not possible to ascertain whether the current pit design resembles the pit wall analyzed by IGES in 2004.

Although the IGES report does not contain a geologic map of (i.e., a geologic projection to) the proposed pit, the sections on pages 4 to 9 illustrate the simplified geology that IGES modeled.

Page 3, paragraph 3, refers to a "JBR reclamation section" which does not appear to be in the IGES report. No cross-section location drawing or end coordinates are provided.

IGES used the modified Bishop Method of slices in computer program GSTABL7 v2 to calculate the factor of safety of the overall slope. Slip circle analysis is inappropriate for a rock slope, except for slopes cut in very weak and/or highly fractured rock masses. Rock slope stability is generally controlled by shear on discontinuities rather than failure through the rock mass. This is because the shear strength of discontinuities is generally less than intact or rock mass strength. Thus, unless extremely low rock mass strengths are used (which is not the case here), slip circle analysis of a rock slope is non-conservative.

Based on descriptions in the Oct-04 IGES and Jun-07 JBR reports, the cross section shown on page 9 (IGES, Oct-04) is thought to represent the recommended final pit design configuration. The proposed slope is a compound slope with a 60deg lower segment, 50deg mid-section and 40deg upper segment. The proposed cut slope height is 900ft. The lowermost 450ft section is composed of limestone at 60deg. Above the limestone is a 200ft high section of siltstone at 50deg. The siltstone is overlain by 75ft of conglomerate at 50deg which is capped by 175ft of cemented gravel excavated at 40deg.

Convex slope – adverse stress distribution

No catch benches on lower 450ft 60deg slope - rockfall

M/035/020
Beth Erickson

Hoek-Brown strengths were estimated from scant data using program ROCLAB. The strength of the conglomerate and cemented gravel, the two lowest strength units, were then "adjusted" upward based on the ROCLAB analyses "supplemented by IGES engineering judgment" (pg3, para1). No "adjustments" were made to the estimated limestone or siltstone strengths. Conglomerate friction angle and cohesion were "adjusted" upward by 280% and 15.7%, respectively. Cemented gravel friction angle and cohesion were "adjusted" upward by 26.7% and 150%, respectively. Clearly these are very significant upward "adjustments." IGES obviously had some reservations regarding the conglomerate and gravel strength estimates because on pg 10, paragraph 1 they state "The basis for the analyses ... are limited to field observations and limited boring information, neither of which address adequately, the geomechanical properties of the conglomerate or overlying gravel units." The "lack of substantive data, specifically drill core RQD and discontinuity condition and spacing" prevented strength estimation using other methods including those of Bieniawski (pg3, para2).

"Based on these significant data gaps, ... in order to ... appropriately address stability of acceptable configurations ... we recommend ... several deep cored borings be performed behind the proposed final highwall perimeter." "These borings should incorporate appropriate strength testing and observation of other appropriate parameters to facilitate development of a more realistic lithologic model to be used in final slope stability analyses" (p10, para2).

"In general, the exposed slope faces have been exposed to weathering and fracturing that has been impacted by the mining process during removal of the resource. Intact rock properties are suspected to be better than those observed on the exposures" (pg2, para1).

w.r.t the June 2007 NOI

The figure labeled "VIEW: Typical Bench Section, June 6, 2007" should include the bench face angle and inter-ramp slope angle. Three "typical" sections should be shown in this figure, one for each of the proposed inter-ramp slope angles, i.e., 60-deg in the limestone, 50-deg in the siltstone and conglomerate, and 40deg in the cemented gravel.

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